## HARGRAVE ENVIRONMENTAL CONSULTING, INC.

Site Assessment / Remediation

REPORT OF TWELFTH GROUNDWATER MONITORING AND SAMPLING EVENT 12/10/05 TO 6/27/05

JAMUL-DULZURA UNION SCHOOL DISTRICT TRANSPORTATION YARD 14581 LYONS VALLEY ROAD JAMUL, CALIFORNIA 91935 DEH CASE NO. H03764-002

> PROJECT NO. 267.1.18 JULY 14, 2005

### HARGRAVE ENVIRONMENTAL CONSULTING, INC.

Project No. 267.1.18
July 14, 2005

Site Assessment / Remediation

Mr. Jim La Chusa Jamul-Dulzura Union School District 14581 Lyons Valley Road Jamul, CA 91935

SUBJECT:

REPORT OF TWELFTH GROUNDWATER MONITORING AND SAMPLING 12/10/05 TO 6/27/05, JAMUL-DULZURA UNION SCHOOL DISTRICT, 14581 LYONS VALLEY ROAD, JAMUL, CALIFORNIA, 91935, DEH CASE NO. H03764-002.

Reference:

Site Assessment Report, Installation of One Additional Groundwater Monitoring Well and Sampling of All Existing Wells, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, 91935, DEH Case No. H03764-002, by HEC, dated January 6, 2005, 2005

2005.

Dear Mr. La Chusa:

Hargrave Environmental Consulting, Inc. (HEC) is submitting the following report of the groundwater monitoring and sampling activities completed at the subject property. This report represents the second of three groundwater monitoring and sampling events under the current contract with HEC and the twelfth event overall.

If you have any questions or comments, please do not hesitate to contact us.

Respectfully,

HARGRAVE ENVIRONMENTAL CONSULTING, INC.

Chuck Hargrave President

Distribution:

riesident

(1) Addressee

(1) Mr. John Seneha, County of San

Dendel Allh Gerald I. Shiller Professional Geologist

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GERALD I.

Poject No. 267.1.18 July 14, 2005

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Project No. 267.1.18
July 14, 2005

#### INTRODUCTION

The purpose of this investigation was to perform groundwater monitoring and sampling at the Jamul-Dulzura Union School District Transportation Yard, 14581 Lyons Valley Road, Jamul, California (see Figure No. 1, Site Location).

The present investigation included groundwater level monitoring and sampling in eight groundwater monitoring wells and three irrigation wells. This report presents the results of the investigation, including a description of field operations, the results of laboratory analyses, a discussion of data and observations, and recommendations. This investigation is part of an on-going groundwater monitoring and sampling program and represents the second of three semi-annual events currently contracted.

#### SITE DESCRIPTION

The subject site is located at 14581 Lyons Valley Road, Jamul, California 91935, and the Assessor's Parcel Number (APN) is 596-152-21 (see Figure No. 1, Site Location). The site, approximately 130 feet by 250 feet, is the Jamul-Dulzura Union School District's transportation yard. The property is comprised of an asphalt paved yard where school buses and other school district vehicles are parked, and miscellaneous equipment is stored (see Figure No. 2, Site Plan with Groundwater Conditions). Site structures include a metal-sided maintenance shop and several buildings that contain school district offices. There is an elementary school adjacent to the west side of the transportation yard. There are also rural residential properties to the north of the site, across Lyons Valley Road, and to the east and south of the site. A small, intermittent creek lies just outside of the south side of the site.

#### GEOLOGY/HYDROGEOLOGY

Based on a review of the references, the site is underlain at depth by Mesozoic granitics of the southern California batholith. The materials observed during past drilling and excavating activities at the site consisted of topsoil and decomposed granitic soils. Topsoil generally consisted of brown, clayey sands that extended to depths of 0-5 feet below ground surface (bgs). Decomposed granitic materials generally consisted of reddish to olive brown, and gray, silty sands. As depth increased, the decomposed granite became less decomposed, to the point that boulders of weathered granite were present as shallow as 13 feet bgs.

Three active irrigation wells (I-1, I-2, and I-3), used for irrigation of playground areas at the school west of the transportation yard, are located within 275 feet of the underground storage tank (UST) excavation. One is 40 feet northeast, one is 110 feet north northeast, and one is 275 feet southeast of the excavation. Depending on atmospheric conditions, water for irrigation may be pumped from the wells as often as every other day. The locations of the wells are shown on Figure No. 2, Site Plan with Groundwater Conditions.

The subject site is located within the Jamul Hydrologic Subarea (10.33) of the Otay Hydrologic Unit. The California Regional Water Quality Control Board (CRWQCB) has assigned beneficial designation for groundwater in this subarea for municipal, agricultural, and industrial purposes, and the County of San Diego, Department of Environmental Health (DEH) has categorized this site as a sensitive-groundwater-use site. On June 27, 2005, stabilized groundwater was measured in the monitoring wells at depths ranging from 10.99 to 16.63 feet below top of well casing (TOC), or at elevations ranging from 1129.89 to 1138.30 feet above MSL. Groundwater depths rose between 14.57 and 18.65 feet bgs from the previous monitoring event completed in December 2004. Depth to groundwater in the irrigation wells was measured at 18.12 (I-1), 18.21 (I-2), and 11.95 (I-3) feet bgs. The groundwater gradient was calculated to be 0.02 feet/foot to 0.04 feet/foot generally towards the southwest which is similar to the previous monitoring event in December 2004.

The CRWQCB has assigned beneficial use designation for surface waters in this subarea for municipal, agricultural, industrial, recreation, and wildlife habitat purposes. A small creek, which is a tributary of Jamul Creek, runs along the south and east sides of the school district property. The creek was dry during this field investigation, but sometimes has surface flows during the winter rainy season. Surface runoff from the school district site is toward the creek.

#### BACKGROUND

On December 1, 1998, one 1,000-gallon steel gasoline underground storage tank (UST) (tank #1), one 2,000-gallon fiberglass diesel UST (tank #2), and associated dispensing equipment were removed from the site. At the time of UST and equipment removal, the inspector noted three small holes in tank #1, as well as petroleum odors and discolored soil in the excavation. Backfill material was placed in the excavation following UST removal.

Laboratory analysis results from soil samples obtained beneath the former USTs and dispenser pad reportedly contained Total Petroleum Hydrocarbon (TPH) concentrations ranging from <10 parts per million (ppm) to 190 ppm for gasoline (TPHg), and <10 ppm to 9,200 ppm for diesel (TPHd). Seven groundwater monitoring wells were installed at the subject site between August 3, 1999, and August 8, 2000. On November 25 and 26, 2002, three of the monitoring wells (MW-1, MW-2, and MW-3) were over-drilled and deepened to accommodate the decreasing groundwater levels observed at the site. Two additional down-gradient wells, MW-8 and MW-9, were installed at the subject site on July 28, 2003, and November 23, 2004, respectively (see Table I, Well Construction Details).

From August 25 to September 1, 2000, an interim remedial soil excavation was performed at the site. A total of 1,590.59 tons of hydrocarbon impacted soils were removed during the excavation, and transported to a licensed treatment facility. Monitoring well MW-4 was destroyed during the excavation. Following the excavation, a quarterly groundwater monitoring and sampling program was initiated on November 1, 2000. For results of past groundwater monitoring events, see the referenced reports and Table II, Summary of Groundwater Monitoring Data.

The site was assigned a Class A priority for methyl tertiary-butyl-ether (MTBE) migration by the County of San Diego, DEH, and the CRWQCB because there are active groundwater irrigation wells onsite. The Class A priority classification requires a fast-track approach to site assessment and mitigation activities. In December 2001, Hargrave Environmental Consulting, Inc. (HEC) conducted a sensitive receptor survey in the vicinity of the subject site. The survey identified 20 sensitive groundwater receptors (including the intermittent creek and irrigation wells) within a 2,250-foot radius of the subject site. Two off-site private wells are down gradient from the site. However, the distance of these wells from the site is great enough for the potential of MTBE impacts reaching these wells to be relatively low.

#### GROUNDWATER MONITORING AND SAMPLING

On June 27, 2005, HEC representatives visited the site to monitor groundwater levels and to obtain groundwater samples for laboratory analyses from eight groundwater monitoring wells and three irrigation wells. The irrigation wells were reportedly last pumped on June 24, 2005.

Prior to the disturbance of liquids, an electronic water level

indicator was used to measure the groundwater depth in each of the monitoring wells. Groundwater depth measurements are summarized in Table II, Summary of Groundwater Monitoring Data, and on Figure No. 2, Site Plan With Groundwater Conditions.

Purging of groundwater monitoring wells was conducted in accordance with the groundwater sampling requirements presented in the DEH Site Assessment and Mitigation (SA/M) Manual, dated February 2005. Monitoring and purging data are included in Appendix A, Well Purge After the groundwater depths were measured, all monitoring with a clean Mega-Typhoon purge wells were purged Groundwater recovery rates after purging were fast within all eight wells with recovery to 80% of static condition occurring in less than two hours. Temperature, pH, and specific conductance (total dissolved solids) were measured after one borehole volume of groundwater was removed from each well. An additional half borehole volume of groundwater was then removed, and temperature, pH, and specific conductance were measured again. The second set of temperature, pH, and specific conductance measurements were within 10% of the first set; therefore, purging was limited to one and a half borehole volumes.

Prior to the disturbance of liquids, an electronic water level indicator was used to measure the groundwater depth in each of the irrigation wells. The pumps in the three irrigation wells were then turned on, and water was pumped into the holding tanks for thirty minutes prior to sampling. Approximately 390 gallons were pumped from I-1, 240 gallons from I-2, and 330 gallons from I-3. Groundwater recovery rates after purging were fast within the three irrigation wells with recovery to 80% of static condition occurring in less than two hours.

Groundwater samples were obtained from the eight monitoring wells and three irrigation wells using new, factory sealed, disposable bailers. Each groundwater sample was collected into 40-milliliter (ml) glass vials, which were filled by opening the bottom discharge valve in the bailer. The vials were immediately sealed with Teflon-lined plastic caps, labeled, and checked for headspace. No headspace was observed in any of the vials. The samples were placed in an ice chest with blue ice and delivered to a state-certified, fixed laboratory for analysis. All groundwater purging and sampling equipment was washed thoroughly with a trisodium phosphate and water solution and rinsed twice with potable water between uses.

The 220 gallons of purge water and rinse water were sealed in four

55-gallon 17-H DOT-approved drums, labeled, and placed within the fenced portion of the site, pending disposal. Disposal of the four drums of water was reportedly completed on July 11, 2005. Disposal verification will be submitted under separate cover.

#### SUMMARY OF LABORATORY ANALYSES

Groundwater samples were analyzed for TPHg by EPA Method 8015 Modified and for benzene, toluene, ethylbenzene, xylenes (BTEX), naphthalene, MTBE, and the oxygenates di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), ethyl tertiary butyl ether (ETBE), and tertiary butyl alcohol (TBA) by EPA Method 8260B. Laboratory results are presented in Table II, Summary of Groundwater Monitoring Data. Chain of Custody forms and complete laboratory reports prepared by American Environmental Testing Laboratory, Inc. (AETL), Burbank, California are presented in Appendix B, Analytical Laboratory Reports and Chain of Custody.

#### GEOTRACKER SUBMITTAL

In accordance with Assembly Bill AB2886, on July 5, 2005, the groundwater level monitoring and sampling data from the current investigation were submitted to the State Water Resources Control Board (SWRCB) GeoTracker system. The laboratory data from the current investigation will be submitted in the near future.

#### DISCUSSION OF DATA AND OBSERVATIONS

On June 27, 2005, groundwater was recorded in the seven monitoring wells at depths of 10.99 to 16.63 feet below top of well casing (TOC), or at elevations ranging from 1129.89 to 1138.30 feet above MSL. Groundwater depths rose between 14.57 and 18.65 feet bgs from the previous monitoring event completed in December 2004 due to heavy seasonal minimum water levels were above the top of the well screen in MW-1, MW-2, MW-3, MW-8, MW-9, and all three irrigation wells. Depth to groundwater in the irrigation wells was measured at 18.12 (I-1), 18.21 (I-2), and 11.95 (I-3) feet bgs. The groundwater gradient was calculated to be 0.02 feet/foot to 0.04 feet/foot generally towards the southwest which is similar to the previous monitoring event in December 2004.

TPHg was not detected in any of the groundwater monitoring wells above a method detection limit (MDL) of 0.5 parts per billion (ppb).

BTEX was not detected at or above the respective MDLs in any of the

groundwater samples. MTBE was detected in MW-1 at 28.1 ppb, MW-3 at 268 ppb, MW-5 at 284 ppb, and in MW-6 at 2.0 ppb. concentrations decreased by 43.1 ppb in MW-1, by at least 0.9 ppb in MW-2, by 663 ppb in MW-3, by 393 ppb in MW-5, and by 20.5 ppb in MW-6 since the December 2004 sampling event. MW-3 and MW-5 also contained TAME at 1.7 ppb, and 1.6 ppb, respectively. None of the groundwater samples contained detectable concentrations of any of the other analyzed constituents above the respective MDLs (see Table II, Summary of Groundwater Monitoring Data). Overall, MTBE concentrations have decreased since completion of the selective soil removal in late 2000. Trends in groundwater depths and MTBE concentrations over time for the monitoring wells are presented graphically on Charts I through Chart VII. Current MTBE concentrations are presented on Figure No. 3, Site Plan with MTBE Contours.

#### RECOMMENDATIONS

1. Based on a review of the sensitive receptor survey, past groundwater monitoring and sampling results, and all other information, an Updated Correction Action Plan (CAP) should be completed recommending closure of the site based on natural attenuation.

#### LIMITATIONS

The contents of this report are based on the following:

- 1. The samples obtained during our subsurface exploration;
- 2. The observations of our field personnel during the field activities;
- 3. The results of laboratory tests performed by AETL, Inc., Burbank, California.
- 4. Information obtained from San Diego County and State regulatory agencies; and
- 5. Reference documents.

Variations in soil conditions could exist beyond the points explored in this investigation. Also, changes in groundwater conditions could occur at some time in the future due to variations in temperature, regional rainfall, and other factors.

The services performed by HEC have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the southern California area. No other warranty, expressed or implied, is made.

#### REFERENCES

- 1. California Water Quality Control Board San Diego Region, 1994, Water Quality Control Plan for the San Diego Basin (9), September 8, 1994.
- 2. County of San Diego, DEH, 1998, Hazardous Materials Management Division Underground Tank Removal/Closure Report, Establishment #H03764, Dulzura Union School District, 14581 Lyons Valley Road, dated January 5, 1999.
- 3. County of San Diego, DEH, 2005, SA/M Manual, dated February, 2005.
- 4. Hargrave Environmental Consulting Inc, 1999, Site Assessment Investigation Drill, Install and Sample Four Soil Borings and Three Groundwater Monitoring Wells, and Associated Tasks, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated December 1, 1999.
- 5. Hargrave Environmental Consulting, Inc., 2000a, Site Assessment Investigation Drill, Install and Sample Two Soil Borings and Two Groundwater Monitoring Wells, and Associated Tasks, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated May 12, 2000.
- 6. Hargrave Environmental Consulting, Inc., 2000b, Report of Environmental Site Assessment Investigation, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated September 7, 2000.
- 7. Hargrave Environmental Consulting, Inc., 2000c, Report of Interim Remedial Action, Excavation of Hydrocarbon Impacted Soils, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated September 29, 2000.
- 8. Hargrave Environmental Consulting, Inc., 2000d, Report of

First Quarterly Groundwater Monitoring and Sampling Following Excavation of Hydrocarbon Impacted Soils, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated December 11, 2000.

- 9. Hargrave Environmental Consulting Inc., 2001a, Report of Second Quarterly Groundwater Monitoring and Sampling, 11/1/00 to 2/5/01, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated February 20, 2001.
- 10. Hargrave Environmental Consulting, Inc., 2001b, Report of Third Quarterly Groundwater Monitoring and Sampling, 2/6/01 to 5/18/01, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated June 8, 2001.
- 11. Hargrave Environmental Consulting, Inc., 2001c, Report of Fourth Quarterly Groundwater Monitoring and Sampling, 5/19/01 to 8/24/01, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated September 17, 2001.
- 12. Hargrave Environmental Consulting, Inc., 2002a, Report of Fifth Quarterly Groundwater Monitoring and Sampling, 8/25/01 to 12/7/01, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated January 2, 2002.
- 13. Hargrave Environmental Consulting, Inc., 2002b, Addendum to Report of Interim Remedial Action, Report of Sensitive Receptor Survey, Jamul-Dulzura Union School District Transportation Yard, 14581 Lyons Valley Road, Jamul, California, DEH File No. H03764-002, dated January 7, 2002.
- 14. Hargrave Environmental Consulting, Inc., 2002c, Report of Sixth Quarterly Groundwater Monitoring and Sampling, 12/8/01 to 3/6/02, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated April 18, 2002.
- 15. Hargrave Environmental Consulting, Inc., 2002d, Report of Seventh Quarterly Groundwater Monitoring and Sampling, 3/7/02 to 9/27/02, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated November 4, 2002.

- 16. Hargrave Environmental Consulting, Inc., 2003a, Site Assessment Report Deepening Three Existing Groundwater Monitoring Wells, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated January 13, 2003.
- 17. Hargrave Environmental Consulting, Inc., 2003b, Report of Eighth Quarterly Groundwater Monitoring and Sampling, 9/28/02 to 3/19/03, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated April 14, 2003.
- 18. Hargrave Environmental Consulting, Inc., 2003c, Site Assessment Report, Installation and Sampling of One Additional Groundwater monitoring Well, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated August 27, 2003.
- 19. Hargrave Environmental Consulting, Inc., 2003d, Report of Ninth Quarterly Groundwater Monitoring and Sampling, 3/20/03 to 9/10/03, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated October 6, 2003.
- 20. Hargrave Environmental Consulting, Inc., 2004, Report of Tenth Quarterly Groundwater Monitoring and Sampling, 9/11/03 to 3/23/04, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated April 16, 2004.
- 21. Hargrave Environmental Consulting, Inc., 2005, Site Assessment Report, Installation of One Additional Groundwater Monitoring Well and Sampling of All Existing Wells, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated January 6, 2005.
- 22. Secor International, Inc., 1999, Work Plan for Site Assessment, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, California, dated May 10, 1999.

TABLE I
WELL CONSTRUCTION DETAILS

WELL DETAILS	MW-1#	MW-2#	MW-3#	MW-4*	MW-5	MW-6	MW - 7	MW - 8	MW - 9	I-1	I-2	I-3
TOTAL DEPTH	44	44	47	35	35	40	40	43	45	240	80	420
CASING DIAMETER	2 in	-	-	-								
WELL SCREEN	24-44	24-44	27-47	15-35	15-35	10-40	10-40	23-43	25-45	-	-	-
SOLID CASING	0-24	0-24	0-27	0-15	0-15	0-10	0-10	0-23	0-25	ı	ı	I
GRAVEL PACK (#3 SAND)	22-44	22-44	24-47	12-35	13-35	8-40	8 - 40	21-43	23-45	ı	ı	I
BENTONITE SEAL	3-22	3-22	3-24	2-12	2-13	2-8	2-8	3-21	3-23	ı	ı	I
SURFACE SEAL (CONCRETE)	0-3	0-3	0-3	0-2	0-2	0-2	0-2	0-3	0-3	-	-	-
DATE COMPLETED	11/26/02	11/26/02	11/26/02	04/04/00	04/04/00	08/08/00	08/08/00	07/28/03	11/23/04	-	-	-

<sup>\*</sup> Well destroyed on 8/28/00

<sup>#</sup> Wells deepened on 11/26/02

<sup>- =</sup> not applicable/not known

TABLE II
SUMMARY OF GROUNDWATER MONITORING DATA

WELL	DATE	GW DEPTH	GW	TPHg	TPHd	BENZENE	TOLUENE	ETHYL-	XYLENES	DIPE	ETBE	TAME	TBA	MTBE	NAPHT-
ID	SAMPLED		ELEVATION					BENZENE							HALENE
			(ft above MSL)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW-1	08/06/99	25.12	1132.38#	<0.050	<500	<0.3	<0.3	<0.3	<0.6	-	-	-	1	135	NA
	10/29/99	28.41	1129.09#	<0.050	<500	<0.3	<0.3	<0.3	<0.6	-	-	-	-	50.5	NA
	04/13/00	27.91	1129.59#	0.125	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	117	NA
	11/01/00	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-	NA
	02/05/01	NO GW	NO GW	_	-	-	-	-	-	-	-	-	-	-	NA
	05/18/01	28.02	1129.48#	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	128	NA
	08/24/01	31.12	1126.38#	_	-	-	-	-	-	-	-	-	-	-	NA
	12/07/01	NO GW	NO GW	_	-	-	-	-	-	-	-	-	-	-	NA
(1147.30)*	03/06/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-	NA
	09/27/02	NO GW	NO GW	_	-	-	-	-	-	-	-	-	-	-	NA
(1147.37)*	12/05/02	36.24	1111.13	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	18.0	NA
	03/19/03	32.60	1114.77	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	55.9	14.2	NA
	07/31/03	33.62	1113.75	-	_	-	-	-	-	-	-	-	-	-	NA
	09/10/03	34.64	1112.73	0.024	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	60.0	NA
	03/23/04	33.22	1114.15	0.049	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	42.1	NA
	12/09/04	31.17	1116.20	0.058	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	71.2	NA
	06/27/05	15.47	1131.90	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	28.1	<0.5
MW-2	10/29/99	30.49	1129.51#	<0.050	<500	<0.3	<0.3	<0.3	<0.6	-	-	-	-	<2.0	NA
	04/13/00	29.92	1130.08#	0.040	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	33.9	NA
	11/01/00	NO GW	NO GW	-	-	-	-		-	-	-	-	-	-	NA
	02/05/01	34.31	1125.69#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	1.7	NA
	05/18/01	29.76	1130.24#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	10.2	NA
	08/24/01	34.25	1125.75#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	9.0	NA
	12/07/01	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-	NA
(1149.78)*	03/06/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-	NA
	09/27/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-		NA
(1149.54)*	12/05/02	38.12	1111.42	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	2.6	NA
	03/19/03	33.75	1115.79	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	0.7J	NA
	07/31/03	35.31	1114.23	-	-	-	-	-	-	-	-	-	-	-	NA
	09/10/03	36.35	1113.19	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	0.7J	NA
	03/23/04	34.86	1114.68	0.014	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	11.6	NA
	12/09/04	32.42	1117.12	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	1.4	NA

TABLE II
SUMMARY OF GROUNDWATER MONITORING DATA

WELL ID	DATE SAMPLED	GW DEPTH	GW ELEVATION	ТРНд	TPHd	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	DIPE	ETBE	TAME	TBA	MTBE	NAPHT- HALENE
			(ft above MSL)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW - 2	06/27/05	16.63	1132.91	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	<0.5
MW-3	10/12/99	30.36	1129.44#	<0.050	<500	0.3	<0.3	<0.3	<0.6	-	-	-	-	221	NA
	04/13/00	29.82	1130.13#	2.93	<500	<0.5	<0.5	<0.5	<1.0	-	ı	-	-	2,670	NA
	11/01/00	NO GW	NO GW	-	-	-	-	-	-	ı	ı	-	-	-	NA
	02/05/01	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-	NA
	05/18/01	29.31	1130.64#		-	<0.5	<0.5	<0.5	<1.0	<0.5	6.4	31.8	<50	3,490	NA
	08/24/01	33.99	1125.70#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	4.7	8.2	<50	1,840	NA
	12/07/01	NO GW	NO GW		-	-	-	-	-	-	-	-	-	-	NA
(1149.55)*	03/06/02	NO GW	NO GW	_	-	-	-	-	-	-	-	-	-	-	NA
	09/27/02	NO GW	NO GW	_	-	-	-	-	-	-	-	-	-	-	NA
(1149.50)*	12/05/02	38.20	1111.3	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	1.4	15.2	279	1,610	NA
	03/19/03	34.08	1115.42	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	1.1	11.4	6,030	1,500	NA
	07/31/03	35.36	1114.14	_	-	-	-	-	-	-	-	-	-	-	NA
	09/10/03	36.36	1113.14	0.394	-	<0.5	<0.5	<0.5	<1.0	<0.5	1.4	7.7	55.0	1,270	NA
	03/23/04	34.90	1114.60	0.765	-	<0.5	<0.5	<0.5	<1.0	<0.5	0.8J	4.5	288	808	NA
	12/09/04	32.76	1116.74	0.623	-	<0.5	<0.5	<0.5	<1.0	<0.5	1.2	8.1	<10	931	NA
	06/27/05	16.40	1133.10	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.7	<10	268	<0.5
MW - 4	04/13/00	28.61	1129.72#	245	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	217	NA
MW-5	04/13/00	28.20	1129.40#	5.68	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	5,390	NA
	11/01/00	33.43	1124.17#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	6.1	<50	1,230	NA
	02/05/01	32.12	1125.48#	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	4.4	<50	796	NA
	05/18/01	28.28	1129.32#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	8.5	<50	1,140	NA
	08/24/01	32.42	1125.18#	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	3.9	<50	970	NA
	12/07/01	34.12	1123.48#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	2.1	<50	690	NA
(1147.37)*	03/06/02	33.23	1,114.14	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	2.7	<10	695	NA
	09/27/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-	NA
	12/05/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-	NA
	03/19/03	32.75	1,114.62	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.5	709	180	NA
	07/31/03	33.72	1,113.65	-	-	-	-	-	-	-	-	-	-	-	NA
	09/10/03	34.71	1,112.66	-	-	-	-		-	-	-	-	-	-	NA
	03/23/04	33.31	1,114.06	0.256	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	0.9J	49.0J	347	NA
	12/09/04	31.44	1,115.93	0.541	-	<0.5	<0.5	<0.5	<1.0	<0.5	0.7J	3.8	17.3J	677	NA

TABLE II
SUMMARY OF GROUNDWATER MONITORING DATA

WELL ID	DATE SAMPLED	GW DEPTH	GW ELEVATION	TPHg	TPHd	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	DIPE	ETBE	TAME	TBA	MTBE	NAPHT- HALENE
12	SAM LED		(ft above MSL)	(mgg)	(dqq)	(dqq)	(dag)	(dqq)	(dqq)	(dqq)	(dqq)	(dqq)	(dgg)	(daa)	(dqq)
MW-5	06/27/05	15.91	1,131.46	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.6	<10	284	<0.5
MW-6	08/14/00	30.78	1124.50#	0.199	<500	<0.5	<0.5	<0.5	<1.5	-	-	-	-	315	NA
	11/01/00	31.52	1123.76#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.6	<50	421	NA
	02/05/01	30.05	1125.23#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.0	<50	266	NA
	05/18/01	26.63	1128.65#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	142	NA
	08/24/01	30.70	1124.58#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.1	<50	288	NA
	12/07/01	32.19	1123.09#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	265	NA
(1145.07)*	03/06/02	31.26	1,113.81	-	-	<0.5	0.5J	<0.5	<1.0	<0.5	<0.5	1.0	<10	300	NA
	09/27/02	34.07	1,111.00	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	163	NA
	12/05/02	34.31	1,110.76	-	-	-	-	-	-	-	-	-	-	-	NA
	03/19/03	30.87	1,114.20	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	216	57.2	NA
	07/31/03	31.99	1,113.08	-	-	-	-	-	=-	-	-	-	-	-	NA
	09/10/03	32.93	1,112.14	0.041	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	107	NA
	03/23/04	31.51	1,113.56	0.046	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	36.3	NA
	12/09/04	29.85	1,115.22	0.024	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	22.5	NA
	06/27/05	15.06	1,130.01	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	2.0	<0.5
MW - 7	08/14/00	36.93	1122.58#	<0.005	<500	<0.5	<0.5	<0.5	<1.5	-	-	-	-	<0.5	NA
	11/01/00	38.07	1121.44#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	02/05/01	35.22	1124.29#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	05/18/01	17.37	1142.14#	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	08/24/01	31.23	1128.28#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	12/07/01	35.48	1124.03#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
(1149.29)*	03/06/02	31.18	1,118.11	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	09/27/02	39.17	1,110.12	-	-	<0.5	<0.5	0.8J	2.8	<0.5	<0.5	<0.5	<10	<0.5	NA
	12/05/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-	NA
	03/19/03	30.03	1,119.26	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	07/31/03	34.91	1,114.38	-	-	-	-	-	-	-	-	-	-	-	NA
	09/10/03	33.55	1,115.74	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	03/23/04	28.65	1,120.64	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	12/09/04	29.64	1,119.65	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	06/27/05	10.99	1,138.30	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	<0.5
MW - 8	07/31/03	30.59	1,113.31	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA

TABLE II
SUMMARY OF GROUNDWATER MONITORING DATA

WELL ID	DATE SAMPLED	GW DEPTH	GW ELEVATION	ТРНд	TPHd	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	DIPE	ETBE	TAME	TBA	MTBE	NAPHT- HALENE
			(ft above MSL)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
(1143.90)*	09/10/03	31.57	1,112.33	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	03/23/04	30.10	1,113.80	<0.005	-	1.0	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	12/09/04	28.58	1,115.32	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	06/27/05	14.01	1,129.89	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	<0.5
MW - 9	12/09/04	30.03	1,115.70	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
(1145.73)*	06/27/05	15.06	1,130.67	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	<0.5
I-1	06/09/00	NM	NM	<0.010	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	11/01/00	NM	NM	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	02/05/01	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	05/18/01	38.48	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	08/24/01	78.62	NM	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	12/07/01	52.31	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
(1152.48)*	03/06/02	36.80	1,115.68	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	09/27/02	>200ft	NA	-	-	<0.5	<0.5	<0.5	2.8	<0.5	<0.5	<0.5	<10	<0.5	NA
	03/19/03	36.41	1,116.07	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	07/31/03	>200ft	NA	-	-	-	-	-	-	-	-	-	-	-	NA
	09/10/03	103.82	1,048.66	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	03/23/04	96.28	1,056.20	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	09/10/04	83.18	1,069.30	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	06/27/05	18.12	1,134.36	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	<0.5
I-2	06/09/00	NM	NM	<0.010	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	11/01/00	NM	NM	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	02/05/01	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	05/18/01	19.65	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	08/24/01	37.06	NM	_	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	12/07/01	38.64	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
(1155.18)*	03/06/02	34.92	1120.26	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	09/27/02	42.88	1112.30	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	03/19/03	34.04	1121.14		-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	07/31/03	42.87	1112.31	-	-	-	-	-	-	-	-	-	-	-	NA
	09/10/03	36.03	1119.15	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	03/23/04	31.95	1123.23	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA

TABLE II
SUMMARY OF GROUNDWATER MONITORING DATA

WELL	DATE	GW DEPTH	GW	TPHg	TPHd	BENZENE	TOLUENE	ETHYL-	XYLENES	DIPE	ETBE	TAME	TBA	MTBE	NAPHT-
ID	SAMPLED		ELEVATION					BENZENE							HALENE
			(ft above MSL)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
I-2	12/09/04	33.02	1122.16	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	06/27/05	13.21	1141.97	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	<0.5
I-3	06/09/00	NM	NM	0.017	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	11/01/00	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	02/05/01	NM	NM	-	_	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	05/18/01	26.54	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	08/24/01	59.25	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
	12/07/01	37.50	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5	NA
(1142.31)*	03/06/02	33.85	1108.46	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	09/27/02	>200ft	NA	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	< 30	<0.5	NA
	03/19/03	33.35	1108.96	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	07/31/03	>200ft	NA	-	-	-	-	-	-	-	-	-	-	-	NA
	09/10/03	85.02	1057.29	<0.005	_	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	03/23/04	77.85	1064.46	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	12/09/04	64.08	1078.23	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	NA
	06/27/05	11.95	1130.36	<0.005	_	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5	<0.5

- = Not Analyzed
- \* = Elevation of top of well casing (TOC) in feet above mean sea level (MSL) surveyed 3/29/02, 12/5/02, 8/4/03 and 12/15/04 by Hirsch & Company, a licensed surveyor. Elevation of irrigation wells is from rim of well head.
- # = Groundwater elevation in feet relative to a temporary benchmark.

NM = Not Measured

NA = Not Applicable

CHART I
MW-1 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS

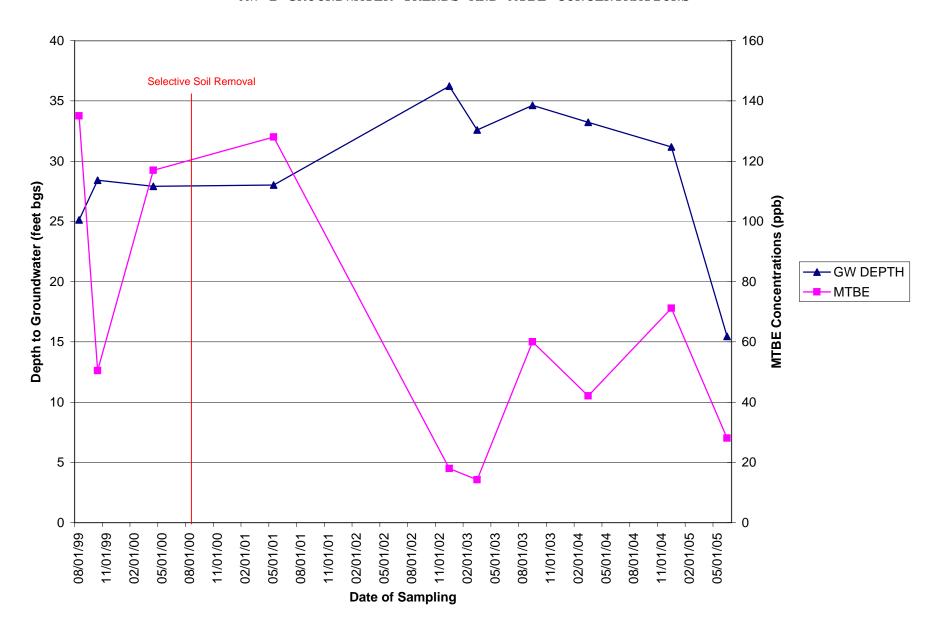


CHART II
MW-2 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS

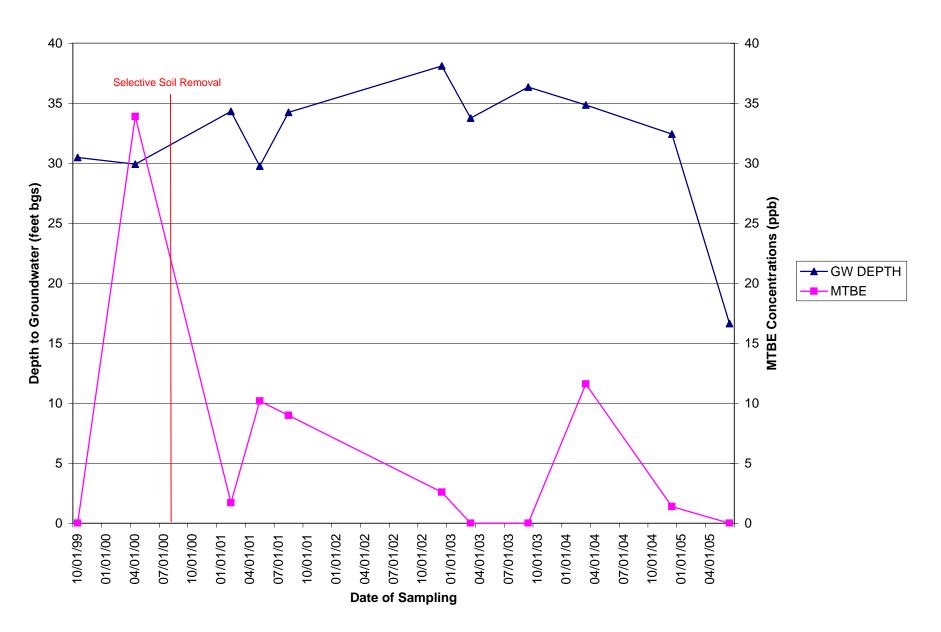


CHART III
MW-3 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS

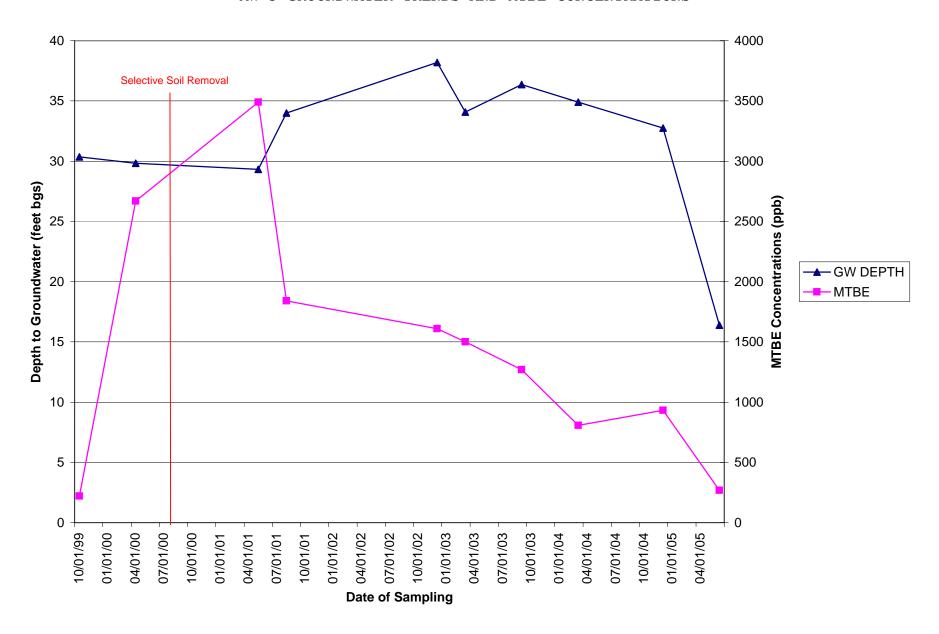


CHART IV
MW-5 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS

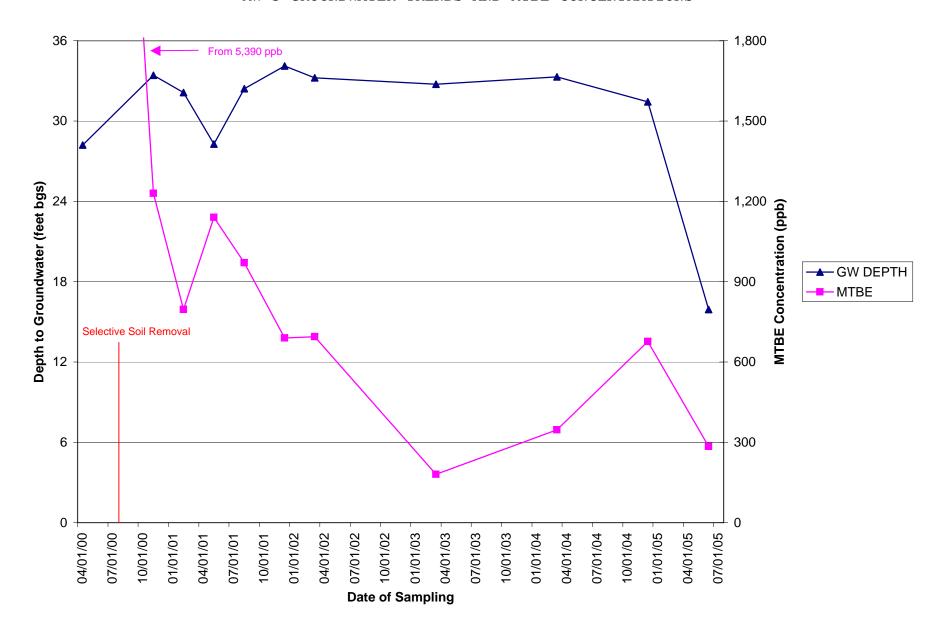


CHART V
MW-6 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS

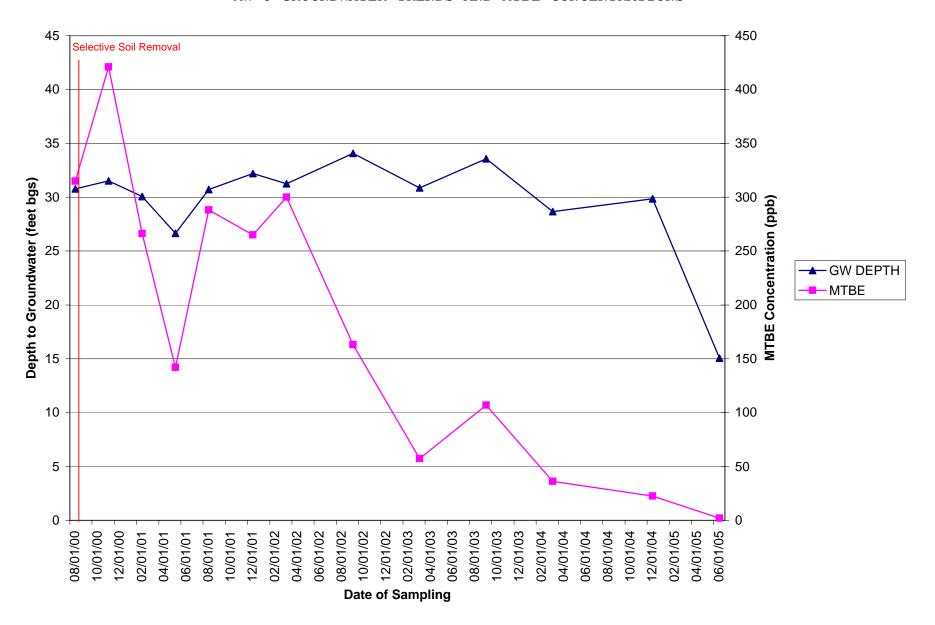


CHART VI
MW-7 GROUNDWATER TRENDS

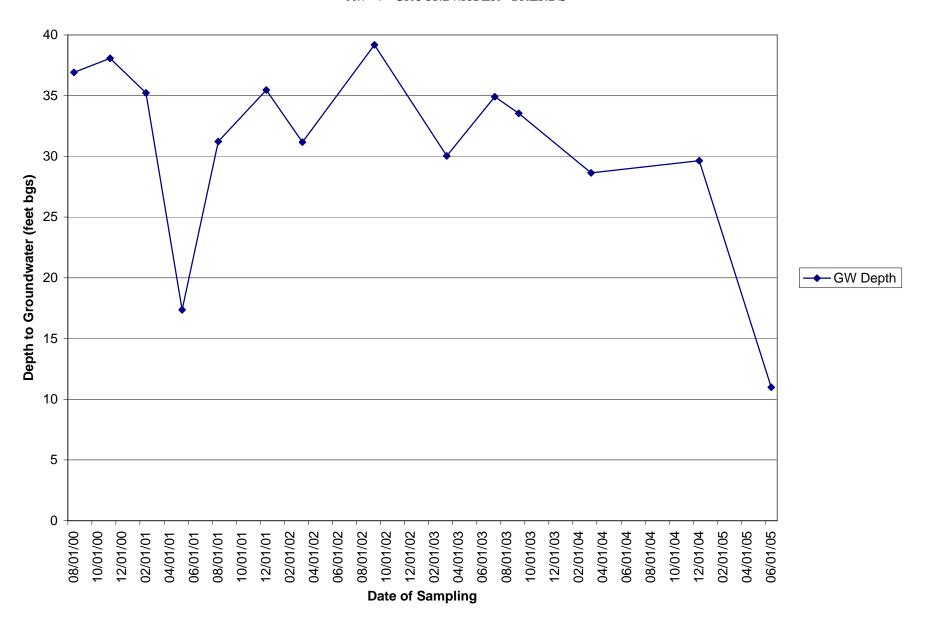
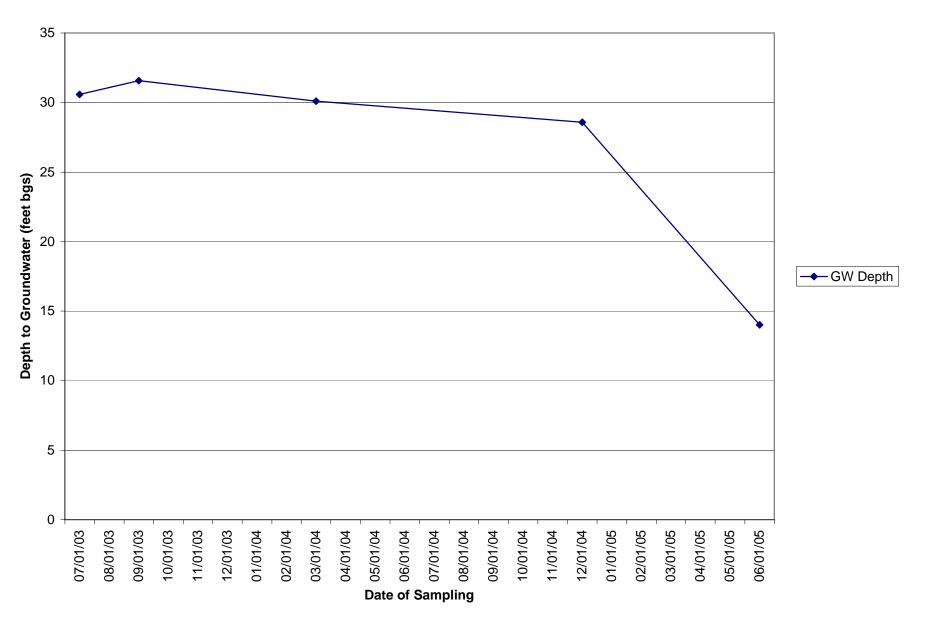
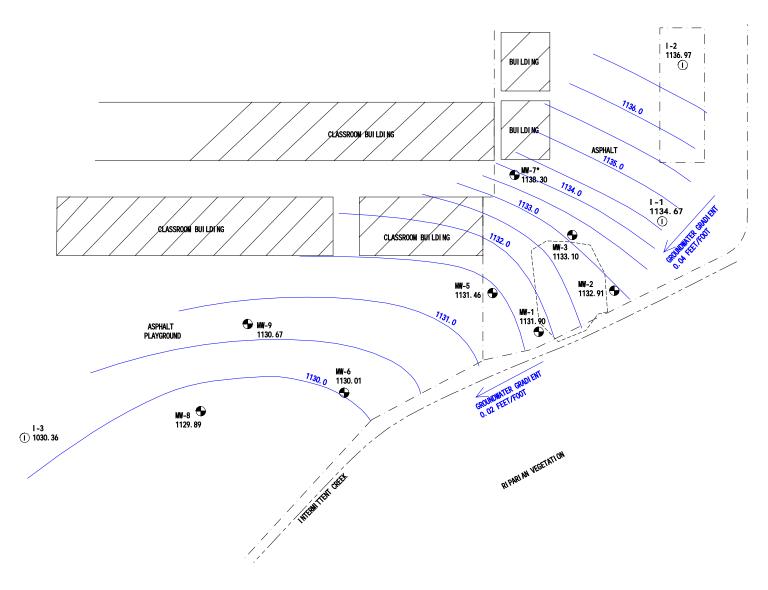
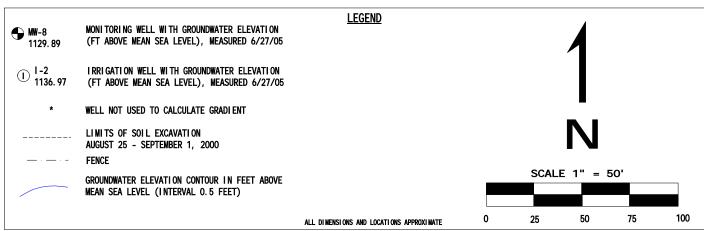


CHART VII
MW-8 GROUNDWATER TRENDS



## JAMUL-DULZURA SCHOOL DISTRICT

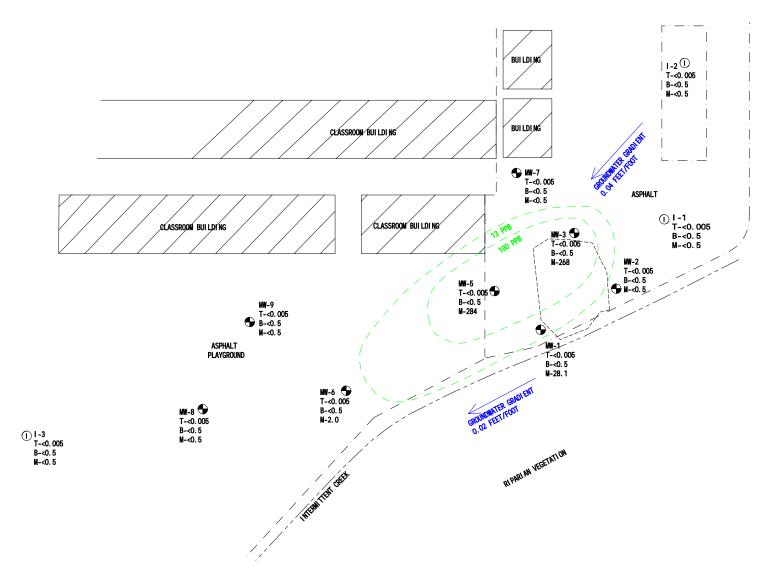


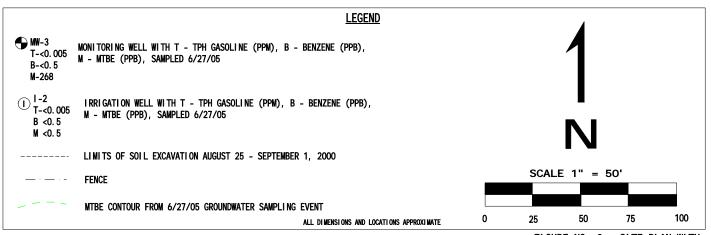


JAMUL-DULZURA SCHOOL DI STRI CT 14581 LYONS VALLEY ROAD JAMUL, CALI FORNI A PROJECT 267. 1. 18

FIGURE NO. 2: SITE PLAN WITH GROUNDWATER CONDITIONS

## JAMUL-DULZURA SCHOOL DISTRICT





JAMUL-DULZURA SCHOOL DISTRICT 14581 LYONS VALLEY ROAD JAMUL, CALIFORNIA PROJECT 267.1.18 FIGURE NO. 3: SITE PLAN WITH MTBE CONTOURS

# APPENDIX A WELL PURGE DATA

Project Name: JAMUL SCHOOL DISTRICT Sampled By: BS Project No.: 267.1.18 Date:6/27/05 Page 1 of 2 Comments:

WELL NO.	MW-1	MW-2	MW-3	MW-5	MW-6	MW-7	MW-8
CASING ELEVATION							
(FEET ABOVE MSL)	1147.37	1149.54	1149.50	1147.37	1145.07	1149.29	1143.90
DEPTH TO FREE							
PRODUCT (FT)	_	_	_	-	_	_	_
DEPTH TO							
GROUNDWATER (FT)	15.47	16.63	16.40	15.91	15.06	10.99	14.01
GROUNDWATER	10.11	10.00	10.10	10.01	10.00	10.00	
ELEVATION (FT)	1131.90	1132.91	1133.10	1131.46	1130.01	1138.30	1129.89
FREE PRODUCT							
THICKNESS (FT)	0	0	0	0	0	0	0
WELL DEPTH (FT)	44.10	44.00	46.70	34.90	39.71	39.97	43.40
GROUNDWATER							
THICKNESS (FT)	28.63	27.37	30.30	18.99	24.65	28.98	29.39
CASING/BOREHOLE							
DIAMETER (IN/IN)	2/8	2/8	2/8	2/8	2/8	2/8	2/8
WELL FACTOR USED	0.88	0.88	0.88	0.88	0.88	0.88	0.88
CALCULATED WELL							
VOLUME (GAL) (1.0)	18.7	18.5	18.6	16.7	21.7	25.5	19.0
'(1.5)	28.1	27.8	27.9	25.1	32.5	38.3	28.5
'(3.0)	-	•	-	-	-	-	-
DEPTH TO 80%							
RECOVERY	21.20	22.10	22.46	19.71	19.99	16.79	19.89
TIME PURGING							
STARTED	1227	1154	1258	1058	1034	906	946
STOPPED	1253	1216	1330	1118	1053	940	1005
INITIAL VOLUME							
REMOVED (GAL)	18.7	18.5	18.6	16.7	21.7	25.5	19.0
INTERMEDIATE	9.4	9.3	9.3	8.4	10.8	12.8	9.5
VALUES	-	-	-	-	-	-	-
TOTAL WATER							
REMOVED (GAL)	28.1	27.8	27.9	25.1	32.5	38.3	28.5
TIME TO RECHARGE 80% WELL VOLUME	.O bro	-O bro	.O bro	.O bro	-O bro	-O bro	-O bro
FAST OR SLOW	<2 hrs	<2 hrs	<2 hrs	<2 hrs	<2 hrs	<2 hrs	<2 hrs
RECHARGING	Fast	Fast	Fast	Fast	Fast	Fast	Fast
TIME SAMPLES	Γαδι	газі	газі	Γαδι	rasi	Γαδι	Γαδι
COLLECTED	1400	1346	1406	1146	1141	1105	1126
pH	6.89/6.87	7.26/7.27	7.41/7.50	7.23/7.21	7.00/6.97	7.03/6.99	7.13/7.10
TEMPERATURE (F)	72.6/71.3	73.1/72.9	71.6/71.9	72.1/71.6	70.8/70.8	71.0/70.2	69.9/70.2
TOTAL DISSOLVED	. 2.0/11.0	. 0. 1/1 2.0		. 2 / / 1.0	. 0.0/10.0	. 1.0/10.2	30.0/10.2
SOLIDS (TDS)	3500/3500	3410/3370	3040/3000	2140/2130	1640/1680	1960/1970	2490/2480
FREQUENCY (HZ)	-	-	-	-	-	-	-
PUMPED/BAILED	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped	Pumped
COMMENTS	Water	Water	Water	1 - 2	1 - 2	1 - 2	Water
	above top	above top	above top				above top
	of screen	of screen	of screen				of screen

Project Name: JAMUL SCHOOL DISTRICT Sampled By: BS Comments: Project No.: 267.1.18 Date:6/27/05 Page 2 of 2

WELL NO.	MW-9	I-1	I <b>-</b> 2	I-3
RIM ELEVATION				
(FEET MSL)	1145.73	1152.48	1155.18	1142.31
DEPTH TO FREE	1110.70	1102.10	1100.10	1112.01
PRODUCT (FT)	_	_	_	_
DEPTH TO				
GROUNDWATER (FT)	15.06	18.12	18.21	11.95
GROUNDWATER (11)	13.00	10.12	10.21	11.95
ELEVATION (FT)	1130.67	1134.36	1136.97	1130.36
FREE PRODUCT	1100.07	1104.00	1100.01	1100.00
THICKNESS (FT)	0	0	0	0
WELL DEPTH (FT)	44.00	240	80	420
GROUNDWATER				0
THICKNESS (FT)	28.94	221.88	61.79	408.05
CASING/BOREHOLE	20.01	221.00	01110	100.00
DIAMETER (IN/IN)	2/8	_	-	_
WELL FACTOR USED	0.88	-	-	-
CALCULATED WELL				
VOLUME (GAL) (1.0)	17.9	_	_	_
'(1.5)	26.9	_	-	_
'(3.0)	-	-	-	-
DEPTH TO 80%				
RECOVERY	20.85	-	-	-
TIME PUMPING				
STARTED	1010	1411	1411	1411
STOPPED	1030	1441	1441	1441
INITIAL VOLUME				
REMOVED (GAL)	17.9	-	-	-
INTERMEDIATE	9.0	-	-	-
VALUES	-	-	-	-
TOTAL WATER				
REMOVED (GAL)	26.9	390	240	330
TIME TO RECHARGE				
80% WELL VOLUME	<2 hrs	<2 hrs	<2 hrs	<2 hrs
FAST OR SLOW				
RECHARGING	Fast	Fast	Fast	Fast
TIME SAMPLES				
COLLECTED	1134	1500	1515	1506
pH	7.31/7.30	-	-	-
TEMPERATURE (F)	72.6/72.1	-	-	-
TOTAL DISSOLVED				
SOLIDS (TDS)	3190/3170	-	-	-
PUMPING RATE				
(GALLONS PER		4-		
MINUTE)	-	13	8	11
PUMPED/BAILED	Pumped	Pumped	Pumped	Pumped
COMMENTS	Water			
	above top			
	of screen			

## **APPENDIX B**

## ANALYTICAL LABORATORY REPORTS AND CHAIN OF CUSTODY



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#### Ordered By

Hargrave Environmental Consulting 8360 Clairemont Mesa Blvd. Suite 107 San Diego, CA 92111-

Telephone: (858)268-4248 Attention: Brian Sweet

Number of Pages	9
Date Received	06/29/2005
Date Reported	07/08/2005

Job Number	Order Date	Client
33936	06/29/2005	HARENV

**Project ID:** 267.1.18

Enclosed please find results of analyses of 11 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By:

02

Approved By:

C. Razmara

Cyrus Razmara, Ph.D. Laboratory Director



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Project ID: 267.1.18

AETL Job Number	Submitted	Client
33936	06/29/2005	HARENV

Method: 8260B, Volatile Organic Compounds (BTEX/OXYG) by GC/MS (SW846)

QC Batch No: 070205

Our Lab I.D.			Method Blank	33936.01	33936.02	33936.03	33936.04
Client Sample I.D.	Client Sample I.D.			MW-7	MW-8	MW-9	MW-6
Date Sampled				06/27/2005	06/27/2005	06/27/2005	06/27/2005
Date Prepared			07/02/2005	07/02/2005	07/02/2005	07/02/2005	07/02/2005
Preparation Method			5030B	5030B	5030B	5030B	5030B
Date Analyzed			07/02/2005	07/02/2005	07/02/2005	07/02/2005	07/02/2005
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor			1	1	1	1	1
Analytes	MDL	PQL	Results	Results	Results	Results	Results
Benzene	0.5	1.0	ND	ND	ND	ND	ND
Ethylbenzene	0.5	1.0	ND	ND	ND	ND	ND
Toluene (Methyl benzene)	0.5	1.0	ND	ND	ND	ND	ND
o-Xylene	0.5	1.0	ND	ND	ND	ND	ND
m,p-Xylenes	1.0	2.0	ND	ND	ND	ND	ND
tert-Butyl alcohol (TBA)	10	50	ND	ND	ND	ND	ND
Diisopropyl ether (DIPE)	0.5	1.0	ND	ND	ND	ND	ND
Ethyl alcohol (Ethanol)	500	1000	ND	ND	ND	ND	ND
Ethyl-tert-butyl ether (ETBE)	0.5	1.0	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND	ND	ND	2.0
tert-Amyl methyl ether (TAME)	0.5	1.0	ND	ND	ND	ND	ND
Naphthalene	0.5	1.0	ND	ND	ND	ND	ND

Our Lab I.D.			33936.01	33936.02	33936.03	33936.04
Surrogates	%Rec.Limit	% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Bromofluorobenzene	75-125	97	97	98	100	100
Dibromofluoromethane	75-125	99	101	99	101	103
Toluene-d8	75-125	102	102	100	99	98



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Project ID: 267.1.18

AETL Job Number	Submitted	Client
33936	06/29/2005	HARENV

Method: 8260B, Volatile Organic Compounds (BTEX/OXYG) by GC/MS (SW846)

QC Batch No: 070205

Our Lab I.D.			33936.05	33936.06	33936.07	33936.08	33936.09
Client Sample I.D.			MW-5	MW-2	MW-1	MW-3	I-1
Date Sampled			06/27/2005	06/27/2005	06/27/2005	06/27/2005	06/27/2005
Date Prepared			07/02/2005	07/02/2005	07/02/2005	07/02/2005	07/02/2005
Preparation Method			5030B	5030B	5030B	5030B	5030B
Date Analyzed			07/02/2005	07/02/2005	07/02/2005	07/02/2005	07/02/2005
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor			1	1	1	1	1
Analytes	MDL	PQL	Results	Results	Results	Results	Results
Benzene	0.5	1.0	ND	ND	ND	ND	ND
Ethylbenzene	0.5	1.0	ND	ND	ND	ND	ND
Toluene (Methyl benzene)	0.5	1.0	ND	ND	ND	ND	ND
o-Xylene	0.5	1.0	ND	ND	ND	ND	ND
m,p-Xylenes	1.0	2.0	ND	ND	ND	ND	ND
tert-Butyl alcohol (TBA)	10	50	ND	ND	ND	ND	ND
Diisopropyl ether (DIPE)	0.5	1.0	ND	ND	ND	ND	ND
Ethyl alcohol (Ethanol)	500	1000	ND	ND	ND	ND	ND
Ethyl-tert-butyl ether (ETBE)	0.5	1.0	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	0.5	1.0	284	ND	28.1	268	ND
tert-Amyl methyl ether (TAME)	0.5	1.0	1.6	ND	ND	1.7	ND
Naphthalene	0.5	1.0	ND	ND	ND	ND	ND

Our Lab I.D.		33936.05	33936.06	33936.07	33936.08	33936.09
Surrogates	%Rec.Limit	% Rec.				
Bromofluorobenzene	75-125	99	101	101	101	98
Dibromofluoromethane	75-125	101	101	100	103	104
Toluene-d8	75-125	102	98	99	99	96



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Page: 4

Project ID: 267.1.18

AETL Job Number	Submitted	Client
33936	06/29/2005	HARENV

Method: 8260B, Volatile Organic Compounds (BTEX/OXYG) by GC/MS (SW846)

QC Batch No: 070205

Our Lab I.D.			33936.10	33936.11		
Client Sample I.D.			I-3	I-2		
Date Sampled			06/27/2005	06/27/2005		
Date Prepared			07/02/2005	07/02/2005		
Preparation Method			5030B	5030B		
Date Analyzed			07/02/2005	07/02/2005		
Matrix			Aqueous	Aqueous		
Units			ug/L	ug/L		
Dilution Factor			1	1		
Analytes	MDL	PQL	Results	Results		
Benzene	0.5	1.0	ND	ND		
Ethylbenzene	0.5	1.0	ND	ND		
Toluene (Methyl benzene)	0.5	1.0	ND	ND		
o-Xylene	0.5	1.0	ND	ND		
m,p-Xylenes	1.0	2.0	ND	ND		
tert-Butyl alcohol (TBA)	10	50	ND	ND		
Diisopropyl ether (DIPE)	0.5	1.0	ND	ND		
Ethyl alcohol (Ethanol)	500	1000	ND	ND		
Ethyl-tert-butyl ether (ETBE)	0.5	1.0	ND	ND		
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND		
tert-Amyl methyl ether (TAME)	0.5	1.0	ND	ND		
Naphthalene	0.5	1.0	ND	ND		

Our Lab I.D.		33936.10	33936.11		
Surrogates	%Rec.Limit	% Rec.	% Rec.		
Bromofluorobenzene	75-125	100	98		
Dibromofluoromethane	75-125	99	100		
Toluene-d8	75-125	103	98		



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Project ID: 267.1.18

AETL Job Number	Submitted	Client
33936	06/29/2005	HARENV

## Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID QC Batch No: 070105

Our Lab I.D.			Method Blank	33936.01	33936.02	33936.03	33936.04
Client Sample I.D.				MW-7	MW-8	MW-9	MW-6
Date Sampled				06/27/2005	06/27/2005	06/27/2005	06/27/2005
Date Prepared			07/01/2005	07/01/2005	07/01/2005	07/01/2005	07/01/2005
Preparation Method			5030B	5030B	5030B	5030B	5030B
Date Analyzed			07/01/2005	07/01/2005	07/01/2005	07/01/2005	07/01/2005
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor			1	1	1	1	1
Analytes	MDL	PQL	Results	Results	Results	Results	Results
TPH as Gasoline and Light HC. (C4-C12)	0.005	0.010	ND	ND	ND	ND	ND

Our Lab I.D.			33936.01	33936.02	33936.03	33936.04
Surrogates	%Rec.Limit	% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Bromofluorobenzene	75-125	102	100	95	102	97



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Project ID: 267.1.18

AETL Job Number	Submitted	Client
33936	06/29/2005	HARENV

## Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID QC Batch No: 070105

Our Lab I.D.			33936.05	33936.06	33936.07	33936.08	33936.09
Client Sample I.D.			MW-5	MW-2	MW-1	MW-3	I-1
Date Sampled			06/27/2005	06/27/2005	06/27/2005	06/27/2005	06/27/2005
Date Prepared			07/01/2005	07/01/2005	07/01/2005	07/01/2005	07/01/2005
Preparation Method			5030B	5030B	5030B	5030B	5030B
Date Analyzed		07/01/2005	07/01/2005	07/01/2005	07/01/2005	07/01/2005	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor		1	1	1	1	1	
Analytes	MDL	PQL	Results	Results	Results	Results	Results
TPH as Gasoline and Light HC. (C4-C12)	0.005	0.010	ND	ND	ND	ND	ND

Our Lab I.D.		33936.05	33936.06	33936.07	33936.08	33936.09
Surrogates	%Rec.Limit	% Rec.				
Bromofluorobenzene	75-125	101	99	95	102	101



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Project ID: 267.1.18

AETL Job Number	Submitted	Client
33936	06/29/2005	HARENV

## Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID QC Batch No: 070105

Our Lab I.D.			33936.10	33936.11		
Client Sample I.D.		I-3	I-2			
Date Sampled		06/27/2005	06/27/2005			
Date Prepared		07/01/2005	07/01/2005			
Preparation Method		5030B	5030B			
Date Analyzed	Date Analyzed			07/01/2005		
Matrix			Aqueous	Aqueous		
Units			mg/L	mg/L		
Dilution Factor			1	1		
Analytes	MDL	PQL	Results	Results		
TPH as Gasoline and Light HC. (C4-C12)	0.005	0.010	ND	ND		

Our Lab I.D.		33936.10	33936.11		
Surrogates	%Rec.Limit	% Rec.	% Rec.		
Bromofluorobenzene	75-125	99	101		



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Page:

Project ID: 267.1.18

AETL Job Number	Submitted	Client
33936	06/29/2005	HARENV

Method: 8260B, Volatile Organic Compounds (BTEX/OXYG) by GC/MS (SW846) QUALITY CONTROL REPORT

QC Batch No: 070205 Sample Spiked: 070205 QC Prepared: 07/02/2005 QC Analyzed: 07/02/2005

	Sample	MS	MS	MS	MS DUP	MS DUP	MS DUP	RPD	MS/MSD	MS RPD
Analytes	Result	Concen	Recov	% REC	Concen	Recov	% REC	%	% Limit	% Limit
Benzene	0.0	50.00	51.50	103	50.00	48.00	96	7.0	75-125	<20
Toluene (Methyl benzene)	0.0	50.00	52.00	104	50.00	50.00	100	3.9	75-125	<20
Methyl-tert-butyl ether (MTBE)	0.0	50.00	54.00	108	50.00	53.50	107	<1	75-125	<20
Chlorobenzene	0.0	50.00	51.50	103	50.00	50.50	101	2.0	75-125	<20
1,1-Dichloroethene	0.0	50.00	53.00	106	50.00	52.50	105	<1	75-125	<20
Trichloroethene	0.0	50.00	53.00	106	50.00	47.50	95	10.9	75-125	<20

#### QC Batch No: 070205 Sample Spiked: 070205 QC Prepared: 07/02/2005 QC Analyzed: 07/02/2005

	LCS	LCS	LCS	LCS/LCSD			
Analytes	Concen	Recov	% REC	% Limit			
Benzene	50.00	47.50	95	75-125			
Toluene (Methyl benzene)	50.00	47.00	94	75-125			
Methyl-tert-butyl ether (MTBE)	50.00	47.50	95	75-125			
Chlorobenzene	50.00	48.00	96	75-125			
1,1-Dichloroethene	50.00	49.00	98	75-125			
Trichloroethene	50.00	48.00	96	75-125			
LCS							
Chloroform (Trichloromethane)	50.00	48.50	97	75-125			
Ethylbenzene	50.00	48.50	97	75-125			
1,1,1-Trichloroethane	50.00	48.50	97	75-125			
o-Xylene	50.00	48.00	96	75-125			
m,p-Xylenes	100.00	96.00	96	75-125			



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#### ANALYTICAL RESULTS

#### Ordered By

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Project ID: 267.1.18

AETL Job Number	Submitted	Client
33936	06/29/2005	HARENV

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID QUALITY CONTROL REPORT

QC Batch No: 070105 Sample Spiked: 070105 QC Prepared: 07/01/2005 QC Analyzed: 07/01/2005

	Sample	MS	MS	MS	MS DUP	MS DUP	MS DUP	RPD	MS/MSD	MS RPD
Analytes	Result	Concen	Recov	% REC	Concen	Recov	% REC	%	% Limit	% Limit
TPH as Gasoline and Light HC.	0.0	0.50	0.56	111	0.50	0.55	110	<1	75-125	<20
(C4-C12)										

QC Batch No: 070105 Sample Spiked: 070105 QC Prepared: 07/01/2005 QC Analyzed: 07/01/2005

	LCS	LCS	LCS	LCS/LCSD			
Analytes	Concen	Recov	% REC	% Limit			
TPH as Gasoline and Light HC.	0.50	0.53	106	75-125			
(C4-C12)							